

RADIO CONTROL GLOW/ELECTRIC 105-INCH WINGSPAN

de Havilland DH.82 Tiger Moth V2 Flat-finish ARF

INSTRUCTION MANUAL



The de Havilland DH.82 Tiger Moth is a 1930s biplane designed by Geoffrey de Havilland and built by the de Havilland Aircraft Company. It was operated by the Royal Air Force (RAF) and many other operators as a primary trainer aircraft. In addition to the type's principal use for *ab-initio* training, the Second World War saw RAF Tiger Moths operating in other capacities, including maritime surveillance and defensive anti-invasion preparations; some aircraft were even outfitted to function as armed light bombers.

The Tiger Moth remained in service with the RAF until it was succeeded and replaced by the de Havilland Chipmunk during the early 1950s. Many of the military surplus aircraft subsequently entered into civil operation. Many nations have used the Tiger Moth in both military and civil applications, and it remains in widespread use as a recreational aircraft in several countries. It is still occasionally used as a primary training aircraft, particularly for those pilots wanting to gain experience before moving on to other tail wheel aircraft. Many Tiger Moths are now employed by various companies offering trial lesson experiences.

The V2 ARF is in RAAF silver/yellow color scheme and a big top hatch is added to the fuselage for easy access to the electronics. Left and right wings are easy to disassemble for transportation. Customers can set it up for 40~50cc gas or electric. The V2 Tiger Moth will be all in Flat-finish. A flat top coat will be painted on top of the covering mylar at the factory, Flat-finish ARF is **NOT FABRIC** covered, still plastic mylar, but the whole airplane will be in flat no more shining. That is the major difference with previous version. **Fabric** covered ARF can be special ordered and will be custom covered and painted in USA.

We invite you to enjoy the pride of ownership and the joy of flying this high quality balsa, composite and light-ply almost-ready-to-fly aircraft.

Maxford **USA**®

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I. SPECIFICATIONS*

- Wingspan 105 inches
- Length 83 inches
- Wing area 2,136 square inches
- ARF-only weight about 12 pounds
- Center of gravity (CG) 10.35 inches (approx. 263 mm)
back from the leading edge of the wing
- Radio system (not included) Minimum of 4 channels with 5 standard servos for electric setup
6 standard servos for gas or glow setup,
(2 for rudder and the other 2 for ailerons)
- Recommended power 40~50cc gas or equivalent-powered electric motor
*(Dimensions and weights are approximate.)

II. PARTS LIST

1. Included items

- Pre-covered fuselage, wing panels, ailerons, empennage with elevator and rudder.
- Landing gear, main and tail wheels
- Decal set
- Composite wing joiner, control horns and related hardware (except items normally supplied with servos, engines and motors).
- Cockpit hatch
- Fiberglass cowl
- Control surface hinges
- Aileron, rudder and elevator pushrods and related linkages.
- This illustrated instruction manual.

2. Items you must supply to complete this ARF

- Cyanoacrylate (CA) and epoxy adhesives and optional threadlock compound.
- Common household shop tools (screwdriver, pliers, etc.).
- Power system, 40~50cc gas or equivalent-powered electric motor.
- Propeller as recommended by the maker of your power system.
- 4 (or more) channel radio system.
- 6 standard servos (such as Hitec HS311) when using a gas engine, or 5 standard servos if using an electric power system.
- 2 of 24-inch extensions and 2 of 12-inch Y-harness
- 2 of Maxford USA [1/5 WWI Pilot Figures](#)



III. SPECIAL FEATURES

- Classic balsa and plywood construction.
- All required openings are predrilled and/or precut.
- 2-piece fuselage design will shrink the size of boxes, that might help to prevent shipping damage
- The wing is easily removed for transportation with Maxflok Pins*.
- All major assemblies are preassembled and either precovered in Mylar or prepainted.
- Designed for both gas and electric power.
- An oversized removable cockpit hatch gives customers a wide range of choices for using space inside the fuselage.
- Sacle Anti-spin Strakes added on tail
- Mylar covered ARF is painted a matt top coat at factory.
This is the only flat-finish ARF on the market. See the difference of regular mylar covered wing panel (left) and flat-finish result (right).



*Maxflok Pin is the design for easy assembling of model airplane parts invented by Maxford USA. A rod will go through the two parts, a tab will be half glued in 1st part, half slide into a slot on 2nd part. A magnet bottom will be preinstalled in the 2nd part, a L shape metal pin will slide through the 2nd part and tab to be held by the magnet. Simply remove the pin, the 1st and 2nd parts will be disassembled.

IV. IMPORTANT THINGS CUSTOMERS MUST KNOW BEFORE ASSEMBLING THIS ARF

Please read and follow all instructions carefully, even if you are an experienced builder. Any assembling, testing or flying of this airplane is done entirely at your own risk. If you use a receiver battery to power your radio system and you are using an electric power system, do not attempt to combine the output of your radio's battery with any battery-eliminator circuit.

V. STORAGE, FIELD SETUP & PREFLIGHT CHECKS

1. Check the Mylar covering material's joints and surfaces. If necessary, carefully use an iron on medium heat to secure the edges and to tighten any loosened areas. Recheck and retighten from time to time; be careful to not apply too much heat as you secure edges or tighten the Mylar. If any trim becomes loosened, press it down and/or apply clear tape. Never apply heat to any trim or plastic part.
2. Ensure the propellers are securely attached to your engines or motors and that they remain undamaged and correctly balanced.
3. To remove the wing:
 - a. Remove the bolts securing the wing to the fuselage near the trailing edge of the wing.
 - b. Slide the wing a few inches toward the tail, disconnect the servo extensions and glow-plug driver wires if used, or motor wires if using an electric power system, then lift the wing fully away from the fuselage. If desired for transport or storage, the wing panels may also be separated and the wing rod may also be removed. Be careful to retain the removed wing attachment bolts, any optional Maxford USA servo-extension safety clips you may have installed, and the wing rod if removed from the wing panels.
4. To reinstall the wing, reverse the above procedure:
 - a. If the wing panels were separated, slide the wing panels onto the wing rod. Position the wing above the fuselage and reconnect the servo extensions, optional Maxford USA servo-extension safety clips and any other optional wiring (or motor wires if using an electric power system).
 - b. Slide the wing forward and insert the carbon fiber 'pins' in the leading edge of the wing into the former at the front of the wing saddle, then use the wing attachment bolts to firmly secure the wing to the fuselage.

5. Preflight checks:

- a. If any weight was added in the nose or tail to adjust the CG, ensure it remains secure.
- b. Double-check the condition and secure attachment of your propellers and batteries.
- c. Make certain all screws, clevises and other mechanical and electrical connections are secure. (Do not attempt to fly with any damaged or frayed electrical or mechanical connection.)
- d. Double-check all control directions and the amounts of control throws.
- e. As with all radio-controlled model airplanes, this model must pass the radio range ground check recommended by your radio's manufacturer or you may not fly safely.
- f. Make it a habit to set your transmitter's throttle control safely to minimum before turning ON your transmitter and receiver and starting your engines or connecting your Lipo flight batteries.
- g. Setup and operate your radio-control and power systems according to their manufacturer's instructions and follow the guidelines offered by the Academy of Model Aeronautics, your local R/C club, and concerned manufacturers, who all wish to help ensure your safe enjoyment of this hobby.

VI. SAFETY PRECAUTIONS & ASSEMBLY TIPS

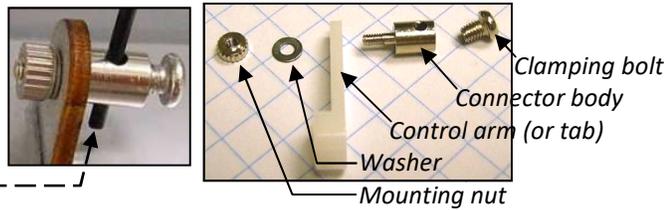
(IMPORTANT – READ THIS SECTION CAREFULLY BEFORE YOU BEGIN ASSEMBLY)

1. This product should not be considered a toy, but rather a sophisticated, working model that functions much like a full-scale airplane. Because of its performance capabilities, this product, if not assembled and operated correctly, could cause injury to you or to spectators and damage to property. Maxford USA provides you with a high-quality, thoroughly tested model airplane kit and written/photo assembly instructions. However, the quality and capabilities of your finished model airplane depend on how you assemble it, and your safety depends on how you use and fly it. Any testing or flying of this model airplane is done entirely at your own risk.
2. Assemble this model airplane according to these written/photo instructions. Do not alter or modify the model beyond any assembly and/or power-system options covered in these instructions; doing so may result in an unsafe or unworkable model. If the instructions differ from the photos, the written instructions should be considered correct. If you have any question or concern about the instructions, before you proceed with assembly of this product, contact your dealer or speak to a Maxford USA customer service representative at 562-529-3988 (Monday through Friday, except national holidays, 9 AM to 5 PM Pacific Time).
3. While this kit has been flight-tested to meet or exceed our rigid performance and reliability standards in normal use, if you elect to attempt any high-stress flying, such as racing or aerobatics, or if you install a larger power system than specified, you (the buyer or user of this product) are solely responsible for taking any and all necessary steps to reinforce the high-stress points and/or substitute hardware that is more suitable for such increased stresses.
4. Throughout the lifetime of this model, use only the Maxford USA-recommended power system and a new or well-maintained radio-control system with fully charged batteries.
5. Before you begin assembly of this model airplane, study the instructions and test-fit each part to ensure you fully understand the instructions and that no parts are missing, damaged or unsatisfactory. Some parts may differ slightly from those pictured in this manual. Due to temperature and/or humidity differences between the factory, our warehouse and your home or workshop, there may be some need for slight adjustments to these instructions and/or to some mounting surfaces to ensure proper installation and alignment. We recommend you contact us before attempting any such adjustment.
6. It is your responsibility to install the receiver and to connect the R/C components in such a way that this model passes all applicable safety/range tests and that the power system and controls operate correctly.
7. Recheck the operation of this model before every flight to ensure all equipment is still operating correctly and that the model remains structurally sound; also check all electrical, control and structural connections. Do not fly without replacing any that you find damaged or worn.



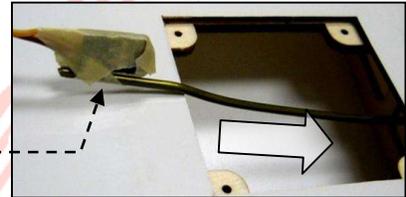
8. To help ensure the security of your servo connections, we recommend using optional Maxford USA servo-extension safety clips as pictured at the right. (For information about safety clips see <http://www.maxfordusa.com/servoextensionsafetyclip.aspx>.)

9. Assemble any included or optionally installed EZ-Link connectors as shown at the right. When applying threadlock compound, do NOT glue the EZ-Link connector to the control arm or mounting tab, and be careful to not let any pushrods bind against any nearby surfaces.



10. Use your radio system or a servo tester to center your servos before installation. (You may be interested to learn more about servo testers at <http://www.maxfordusa.com/servo.aspx>.)

11. String may be supplied to pull your servo's leads and/or servo extensions or other wiring through the wing or fuselage; however, you may find it easier to use masking tape to temporarily attach the end of the wire to a length of coat-hanger wire, then use the wire to pull the lead through the airframe as pictured at the right.



12. After you determine each wood-screw's location, drill a small guide hole then apply thin CA adhesive to harden and strengthen the wood where the screws are to be installed.

13. If Mylar hides a CA hinge's slot, find and open the slot by carefully pressing with a fingernail or sharp hobby knife.

14. If you are not an experienced ARF assembler or R/C pilot, we strongly urge you to get assistance from an experienced R/C assembler and pilot.

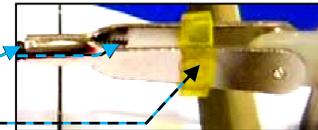
15. Apply threadlock compound or CA adhesive to secure hardware from vibration.

16. Use epoxy to permanently attach, protect and reinforce critical airframe assemblies.

17. If you have concern about the security of any factory-fabrication procedure(s), you may apply extra epoxy adhesive around the perimeter of such part(s) as a safety precaution.

18. Production details such as included hardware and/or Mylar, trim, or paint colors may vary.

19. After adjusting any clevis, secure the clevis to its threaded rod with threadlock compound, epoxy, or CA adhesive. For additional safety, you may hold the clevis closed by adding a small piece of tubing (not supplied) as shown at the right. (NOTE: if included with this model, clevises may be made of plastic or metal.)



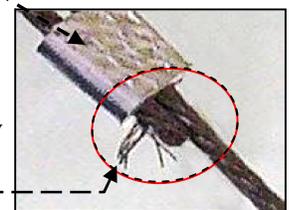
20. Use crimp tubes to secure any included wing wires to anchor points and/or to attach pull-pull cables to threaded rods and clevises as pictured at the right:

a. Slide the crimp tube onto the cable. Guide the end of the cable through the anchor point or hole in the end of the threaded rod.

b. Direct the end of the cable back into and all the way through the crimp tube.

c. Adjust the cable's tension, then use pliers to firmly squeeze several places along the length of the crimp tube to securely crimp the tube onto the cable.

(NOTE: for your safety, after squeezing any crimp tube or adjusting any clevis on its pushrod or threaded rod, apply epoxy or thin CA adhesive to permanently secure each crimp tube or clevis in position. Be careful to not leave any strands of wire poking out from the end of any crimp tube; exposed small steel strands can be sharp enough to cut or abrade skin!)



21. This model may include plastic, fiberglass and/or carbon-fiber-reinforced parts. If you ever drill, grind or sand any such part, wear safety goggles, a particle mask and rubber gloves to guard yourself from eye, skin and respiratory-tract irritation; never blow into such a part as the dust may blow back into your face.

22. If you use an electric power system, read "IMPORTANT THINGS TO CONSIDER WHEN INSTALLING AND OPERATING YOUR MODEL AIRPLANE'S ELECTRIC POWER SYSTEM" on the Maxford USA Website at

<http://www.maxfordusa.com/brushlessmotorandcontroller.aspx>. Also read any instructions that may be included with your motors, electronic speed controls, batteries and charger. Failure to consider and follow such instructions could result in permanent damage to your model airplane, its electric power system, their surroundings, and possible bodily harm! If you crash this model airplane, carefully check for any battery damage. Do NOT attempt to use or recharge a damaged battery.

VII. LIMITED WARRANTY, LIABILITY WAIVER & RETURN POLICY

Maxford USA guarantees this ARF kit to be free from defects in material and workmanship at the time of purchase. Our products have been inspected in our factory and are checked again when shipped from our warehouse. However, Maxford USA cannot directly control the materials you may use or your final assembly process. Therefore, Maxford USA cannot in any way guarantee the performance of your finished model airplane. Furthermore, in purchasing this product, you (the buyer or user of this product) exempt, waive, and relieve Maxford USA from all current or future liability for any personal injury, property damage, or wrongful death, and if you (the buyer or user of this product) are involved in any claim or suit, you will not sue Maxford USA or any of its representatives.

If you do not fully accept the above liability and waiver, you may request a return-merchandise authorization number (RMA#) as explained on the following page in item 2. If you think there is a missing, damaged or unsatisfactory part, please read the following after-sales service and return policy and instructions.

After-sales service and return policy and instructions:

1. Inspect your order upon delivery for any missing, damaged or unsatisfactory part(s). If you believe there is a problem, you must call us at 562-529-3988 (Monday through Friday except holidays, between the hours of 9 AM and 5 PM Pacific time) before you begin assembly and within 10 days from receipt of your purchase. During this telephone conversation, and with your support, we will determine how to resolve your concern.
2. To request a return-merchandise authorization number (RMA#), call 562-529-3988 (Monday through Friday except holidays, between the hours of 9 AM and 5 PM Pacific Time). If we elect to issue you an RMA#, you must clearly mark this RMA# on the outside of the package. (No return or exchange will be authorized after 10 days from the date of your receipt of the product; any package delivered to us without a Maxford USA RMA# is subject to being returned to the sender, as received, with return postage payable upon delivery.) Returned merchandise must be in its original condition as received from Maxford USA, with no assembly or modification, in the product's original packing materials, complete with any included printed materials, manuals and accessories. Return shipping and insurance charges must be prepaid by you, the buyer.
3. Returned merchandise that is accepted by Maxford USA for credit is subject to a 10% to 20% restocking fee (the final amount will be determined by Maxford USA upon receipt and examination of the returned merchandise).

Return address:

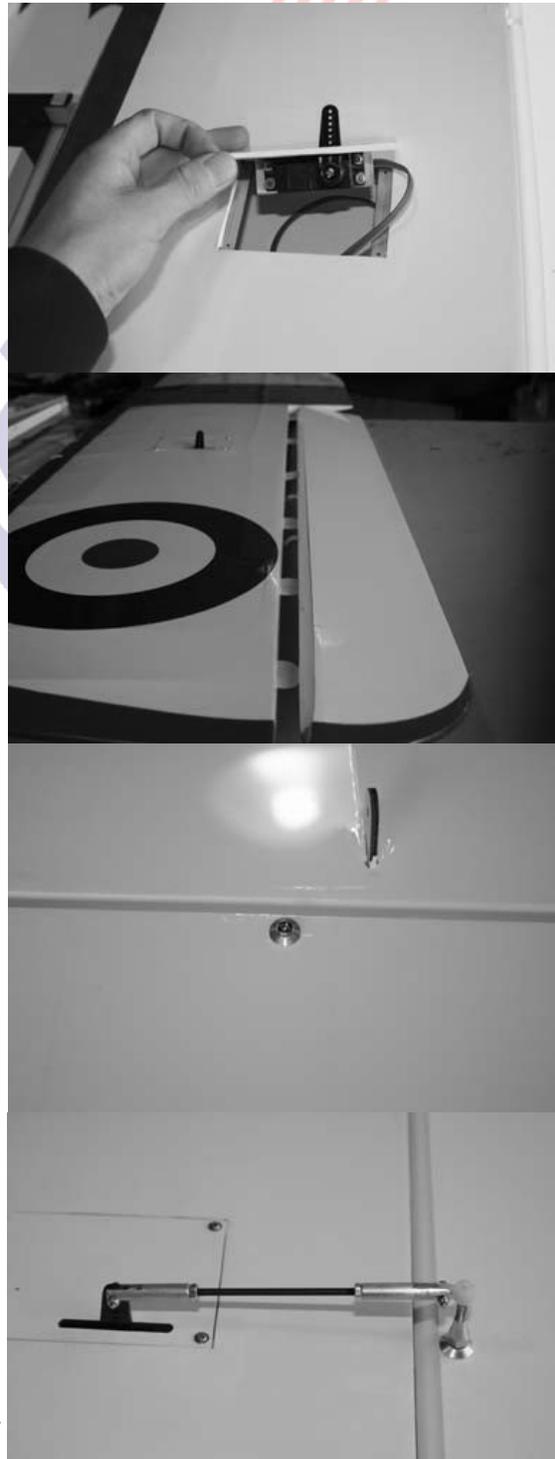
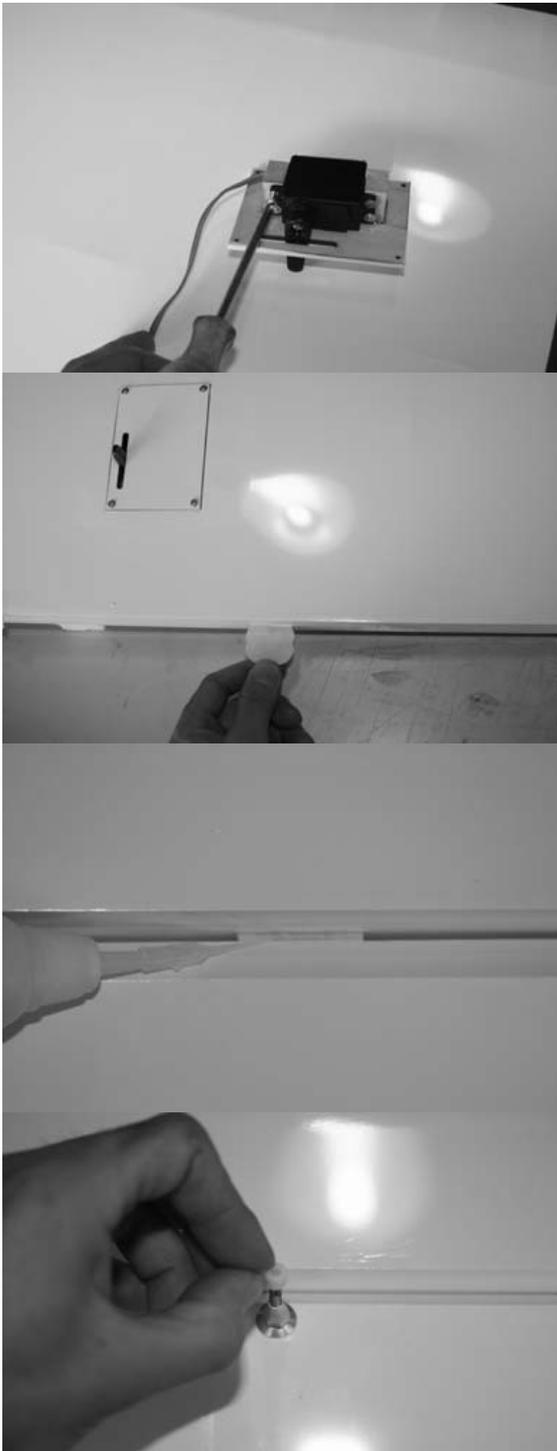
Maxford USA
13630 Imperial HWY, #11
Santa Fe Springs, CA 90670

*IMPORTANT: Print the RMA# issued by Maxford USA
on your package near our address.*

VIII. PHOTO INSTRUCTIONS AND ASSEMBLY NOTES

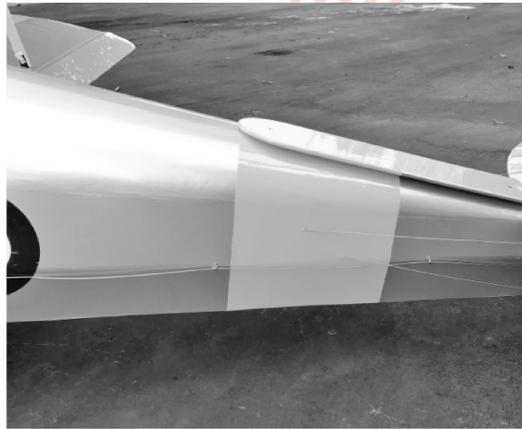
Step 1. Installation of the aileron servos

1. Mount aileron servo to servo mounting blocks with servo's screws. Install servo mounting plate with screws.
2. Insert hinges and aileron into wing, then use CA to fix them.
3. Mount the aileron control horns and aileron pushrods on the ailerons. There are holes pre-drilled to locate the position of these horns.
4. Connect the aileron push-rods to the aileron servos.



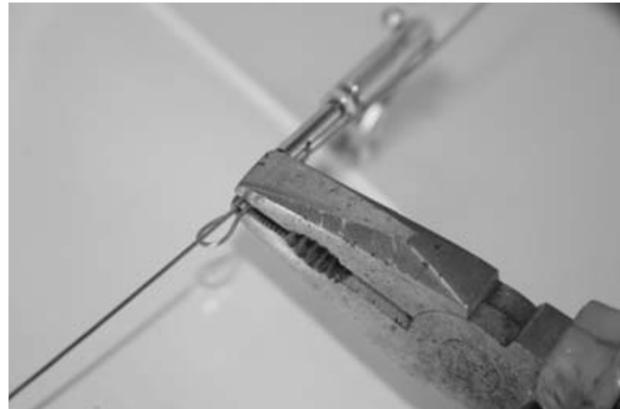
Step 2. Installation in the fuselage

1. Pull out front and rear part of fuselage, slide composite positions pins into front part, then test fit the rear part. When you will be satisfied with test fit, glue front and rear part of fuselage into one piece.
2. Place the fuselage upside down to get access to the opening in the fuselage bottom.
3. Install your elevator servo, 2 rudder servos and throttle servo (if set up for gas) in the servo tray.
4. Connect the clevises of the two sets of elevator pull-pull wires to the elevator servo arm.
5. Install rudder cable rings on each side of fuselage. Guide rudder cable through rings, clip cable end to the rudder servo arm.



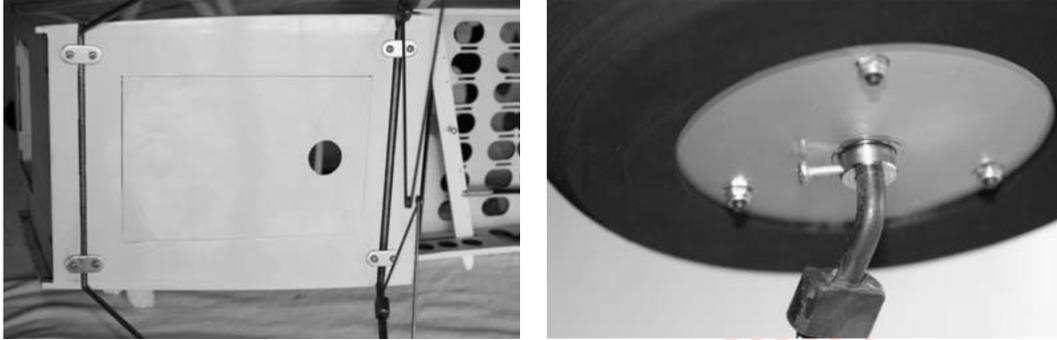
Step3. Mounting the tail surfaces and the tail wheel

1. Test fit then glue the rudder and elevator to vert. fin and horizontal stabilizer with CA.
2. Mount the stabilizer and fin onto the tail end of the fuselage by inserting the two long tail-surface mounting bolts into the holes pre-drill in the fuselage, then securely tighten these bolts into the fin.
3. Install scale Anti-spin Strakes onto the rear of turtle back with wood screws and epoxy.
4. Insert the sharp end of the tail-gear strut into the hole pre-drilled in the fin and apply thin CA to secure it in the fin. Tighten the two mounting screws to secure the mounting plate. (Be sure the tail wheel strut can rotate freely in the mounting plate as you secure the tail wheel strut and tail wheel to the fuselage.)
5. Mount the control horns onto the rudder and elevator.
6. Connect the pull-pull control cables to the horns on the elevator and on the rudder. Adjust the tension in the cables by turning the clevises clockwise or counter-clockwise on the threaded connector.



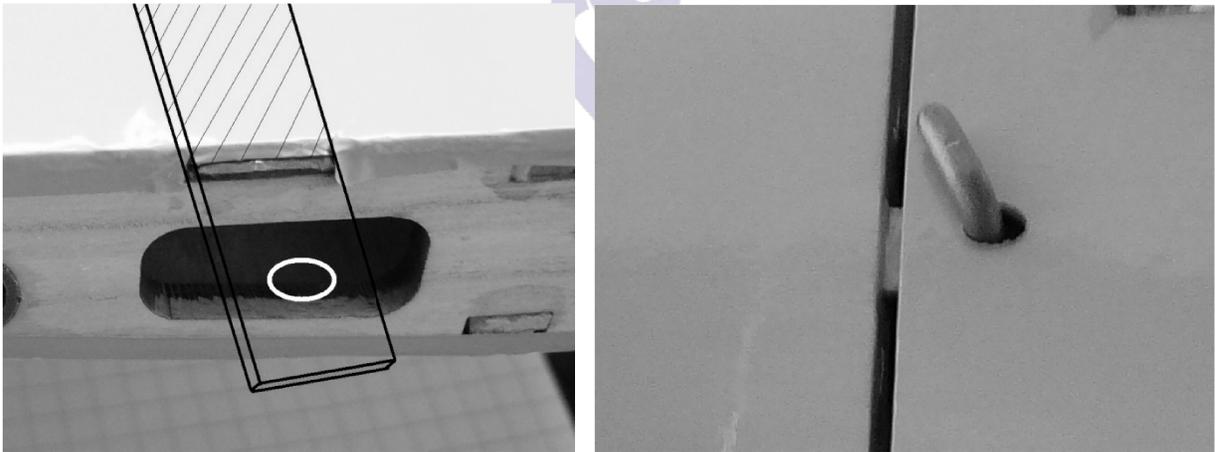
Step 4. Mount the main landing gear assembly

1. Fix the main landing gear assembly in place by tightening the mounting screws in the hold-down plates as shown. There are holes pre-drilled in the bottom of the fuselage for mounting the main landing gear.
2. Slip the main wheels on their axles and use four wheel collars to retain the wheels in place.



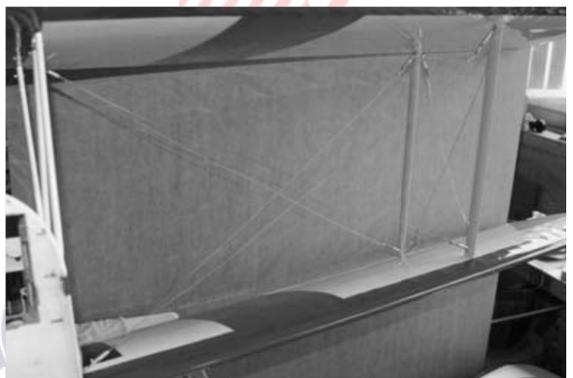
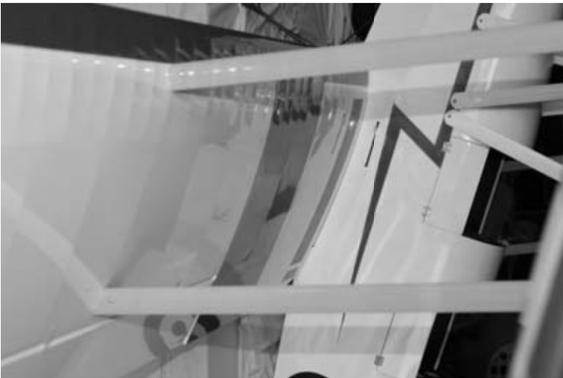
Step 5. Assembling the wing and installing the wing flying wires

1. Install the lower wing center section to the fuselage; test fit the lower wing rod through the center section and lower wing panels. Test fit Maxlok tab with center section and wing panel, slide the Maxlok Pin in posit, mark on tab at the edge of the center section, then glue the tab into the wing panel Maxlok tab slot after test fit.



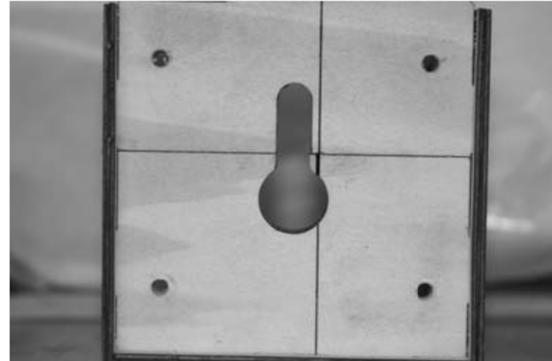
2. Repeat the above step for top wing and install all Maxflok tabs in position.
3. Test fit then install the 6 pcs of the upper wing cabane in place on the upper wing's center section and the fuselage side as shown. There are pre-drilled holes to locate the mounting position of the cabanes. Pay attention to the angle of each of the cabanes.
4. Connect the upper wing to the lower wing with 4 pcs of wing struts. Test fit before glue. Use bolts and self-lock nuts to connect the wing struts and to mount the flying wire connectors. Pay attention to the length of the struts: the rear wing strut is longer than the front wing strut.
5. Screws on 4 pcs of the aluminum angle brackets to the upper wing and lower wing panels.
6. Connect the clevis end of the wires to the connectors as shown.

- Carefully adjust the tension on each of the flying wires to hold the wings in proper alignment to each other. (This is very important! If the wings are twisted by misadjusted flying wires, the airplane may not be controllable in flight.)



Step 6. Install the engine and engine cowl

- Use the specific dimensions of your engine to locate and drill holes into the wooden engine mount's firewall, then attach the engine with the standoffs, screws, washers and/or nuts provided with your engine.
- Test fit your engine with cowl to determine the position of motor box, and then glue the motor box in position. It has to be glued solidly for safety reason. Test fit then drill a hole in the cowl to access the speed needles, and cut any necessary opening(s) for the muffler and exhaust pipe(s) to exit the cowl.
- Mount the cowl with the self-tapping screws supplied.





CONGRATULATIONS! ASSEMBLY IS FINISHED!

IX. INITIAL SETUP, ADJUSTMENTS AND PREFLIGHT CHECKS

1. Check the **C.G.** point, which is about 263-mm (about 10.35 in) behind the leading edge measured at the center of the upper wing center section.
2. Perform a radio range check with the engine running.
3. Adjust the control-surface throws:
Elevator: 30 degrees up / down
Rudder: 30 degrees left / right
Ailerons: 30 degrees up / down
4. Check the heat-shrink covering material's joints and surfaces; if necessary, carefully use a dedicated covering-material heat gun/iron to secure the edges and to tighten any loosened areas. Always use low heat to prevent any possible damage the covering mylar. Recheck and retighten from time to time, being especially careful to keep the edges well sealed.
5. Check/adjust servo centering, direction and end-point adjustments. If you fly mode 2, when you pull the right stick toward you, the elevator should deflect upwards; push the right stick to the right and the right aileron should deflect upwards and the left aileron should deflect downwards; push the left stick left and the rudder should deflect to the left as viewed from the rear of the fuselage. Review your radio's instruction manual if you require assistance with any radio-related installation or servo-adjustment questions.
6. Double-check the security of the engine/motor cowl and make certain that all screws, clevises and other connections throughout the airframe are secure.
7. Double-check the control directions of the throttle, ailerons, elevator and rudder.
8. As with all radio-controlled model airplanes, this model must pass the radio range ground check recommended by your radio's manufacturer, or you may not safely fly.
9. Get into the habit of moving your transmitter's throttle to minimum before turning ON your radio system, and carefully break-in and operate your engine or electric power system according to the manufacturer's instructions.

Reminder ...

- This product is NOT a toy.
- The quality and capabilities of your finished model airplane depend on how you assemble it.
- Your safety depends on how you use and fly it.
- Any testing, flying and use of this model airplane is done entirely at your own risk.

PLEASE ENJOY YOUR HOBBY AND FLY SAFELY!

HAPPY LANDING!

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